

KOVALENKO, A.D.

Change in the resistance of colienteritis pathogens to anti-  
biotics and nitrofurazone preparations in Dnepropetrovsk, 1956-1962.  
Antibiotiki 8 no.38283-287 Mr<sup>o</sup>63 (MIRA 17:4)

1. Dnepropetrovskiy institut epidemiologii, mikrobiologii i  
gigiyeny imeni N.F. Gamalei.

KOVALENKO, A.D.

Development of resistance to chlortetracycline and colimycin in  
Escherichia coli in the animal organism. Antibiotiki 9 no.2:  
159-160 F '64. (MIRA 17:12)

1. Dnepropetrovskiy institut epidemiologii, mikrobiologii i  
gigiyeny imeni N.F. Gamalei.

KOVALENKO, A.D.; AL'ZMAN, Ye.S.; MERZON, V.N.

Shortening the time of the determination of drug sensitivity  
in pathogens during the treatment of colienteritis and dysentery.  
Antibiotiki. 10 no. 1:84-86 Ja '65. (MIRA 18:4)

1. Dnepropetrovskiy institut epidemiologii, mikrobiologii i  
gigiyeny i laboratoriya Detskoy bol'nitsy No.3 Dnepropetrovska.

NUDEL'MAN, L.G.; Prinsipali uchastiye: VERESHCHAGIN, Yu.F.; L'VOV, V.A.;  
STELETSKIY, V.S.; KOVALENKO, A.D.; SIMA'OV, Y.M.

Study of the strength and rigidity of a P313 sheet stamping  
press bed. *Kuz.-shtan.proizv.* 7 no.2:27-33 F '65.

(MIRA 18:4)

NOV 1950 A 1

Chevalier, A. J. Solution of the homogeneous problem  
 of algebraic functions of genus 1 or of branching of  
 degree 2 of various rigidity. Rep. T. Acad.  
 Ser. B. minimum 85, no. 3-4, 15-22 (1949).  
 Russian and English summaries.  
 The author considers several algebraic solutions of the  
 problem of finding a thin circular disk  
 which is rigidly fixed in a special way. The  
 solutions correspond to disk  
 functions of meromorphic type.  
 J. S. Serfaty (Los Angeles, Calif.)

Vol. 6  
 No. 6

KOVALENKO, A.D., kandidat tekhnicheskikh nauk, dotsent.

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Bending of rectangular-profile disks. Vest.mash.27 no.3:1-10  
'47. (Disks, Rotating) (Flexure) (MLRA 9:4)

KOVALENKO, A. D.

Disks, Rotating

Effect of centrifugal forces on the bending of a disk. Zbir. prats' Inst. bud. mekh.  
no. 8, 1948

Monthly List of Russian Accessions, Library of  
Congress November 1952 UNCLASSIFIED

KOVALENKO, A.D.

Kovalenko, A. D. "A calculation of the wheels of a turbo-machine based on the moment in theory of envelopes", Sbornik trudov In-ta stroit. mekhaniki (Akad. nauk Ukr. SSR), Vol. 1948, (In index: 1949), p. 134-51.

SO-U4630, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

KOVALENKO, A. D.

Kovalenko, A. D. "The determination of residual tensions arising in cementing," *Dinamiki i prochnost' aviadvigateley*, Moscow, 1949, p. 108-12.

So: U-3756, 21 May 53, (Letopis' zhurnal 'nykh Statoy, No. 17, 1949).

KOVALENKO, A. D.

Kovalenko, A.D. "Tables and formulae for calculating the bending of round sheets varying in thickness according to linear law", Inform. materialy (Akad. nauk Ukr. SSR, In-t stroit. mekhaniki), No. 3, 1949, p. 11-26.

SO: U-4393, 19 August 53. (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

KOVALENKO, A. D.

Author: Kovalenko, A. D.

Title: The theory of the determination of strength of the turbo-machine wheels.  
(Teoriya rascheta na prochnost' koles turbomashin.) 119 p.

City: Kiev

Publisher:

~~Ukrainian~~ Academy of Sciences of the Ukrainian SSR

Date: 1950

Available: Library of Congress

Source: Monthly List of Russian Accessions, v. 3, no. 12, page 841

KOVALENKO, A. D.

"Stressed Condition of Revolving Conical Jacket with Wall Thickness Which Changes According to Linear Law," Inzh. sbor., No.9, pp. 143-66, 1951.

Examines, by means of moment theory of symmetrically loaded thin jackets of rotation, stressed condition of conical jacket, which jacket revolves about its axis. The jacket's wall thickness decreases from the apex according to linear law and its included angle, between axis and generatrix, is nearly 90 degrees. Such a jacket is used in impellers of turbocompressors, etc. Concludes above-mentioned conical jacket is less durable than disk of corresponding profile. Submitted 21 Jan 48.

257T55

KOVALENKO, A.D.

Nonsymmetrical bending of circular plates with variable thickness.  
Sbor. trud. Inst. stroi. mekh. AN URSR no.15:5-14 '51. (MIRA 11:4)  
(Elastic plates and shells)

KOVALENKO, A.D., chlen-korrespondent.

New solutions to the problem of asymmetrical bending of circular plates of varying stiffness. *Dop. AN URSR* no.3:242-248 '52. (MIRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR. 2. Instytut budivel'noyi mekhaniky  
Akademiyi nauk Ukrayins'koyi RSR. (Elastic plates and shells)

KOVALENKO, A.D.

Bending of a circular plate of varying width by Coriolis forces.  
Sbor.trud.Inst.stroi.mekh.AN USSR no.18:28-40 '53. (MLRA 9:8)  
(Elastic plates and shells)

KOVALENKO, Anatoliy Dmitriyevich; SAVIN, G.N., redaktor; KAPLAN, Ya.L.,  
redaktor; KRILOVSKAYA, N.S., tekhnicheskiy redaktor.

[Plates and casings in rotors of turbine machinery] Plastiny i  
obolochki v rotorakh turbomashin. Kiev, Izd-vo Akademii nauk  
USSR, 1955. 302 p. (MLRA 8:12)

1. Deystvitel'nyy chlen AN USSR (for Savin)  
(Rotors) (Turbomachines)

KOVALENKO, A.D.

ANDREYEV, L.Ye., kandidat tekhnicheskikh nauk; BIDREMAN, V.L., kandidat tekhnicheskikh nauk; BOYARSHINOV, S.V., kandidat tekhnicheskikh nauk; VOL'MIR, A.S., doktor tekhnicheskikh nauk; DIMENTBERG, F.M., kandidat tekhnicheskikh nauk; ZASELATHLEV, S.M., inzhener; KINASOSHVILI, R.S., doktor tekhnicheskikh nauk, professor; KOVALENKO, A.D.,; MAKUSHIN, V.M., kandidat tekhnicheskikh nauk; MALININ, N.M., kandidat tekhnicheskikh nauk; PONOMAREV, S.D., doktor tekhnicheskikh nauk; PRIGOROVSKIY, N.I., doktor tekhnicheskikh nauk; TETE, BAUM, I.M., kandidat tekhnicheskikh nauk; UMANSKIY, A.A., doktor tekhnicheskikh nauk, professor; FIODOS'YEV, V.I., doktor tekhnicheskikh nauk; SERINSEN, S.V., redaktor; TRAPEZIN, I.I., kandidat tekhnicheskikh nauk, redaktor; KARGANOV, V.G., inzhener, redaktor; SOKOLOVA, T.F., tekhnicheskiiy redaktor.

[Mechanical engineer's manual; in 6 volumes] Spravochnik mashinostroitel'ia; v šest' tomakh. Izd.2-e, ispr. i'dop. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, Vol.3, 1955. 563 p.  
(Mechanical engineering) (MLRA 8:12)

*BOGALSKY*

1955  
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... Bending of circular plates of variable thickness (USSR, Prid. Mol. 154-176) (Ukrainian, Russian summary) under the assumption that the normal pressure can be expanded in a Fourier series  
$$w(r, \theta) = \sum_{n=0}^{\infty} \sum_{m=0}^{\infty} A_{nm} J_n(\alpha_{nm} r) \cos n\theta$$
  
The partial differential equation for the deflection of a thin plate with arbitrary boundary conditions and for a function of  $r$ , some particular choices of the constants lead to a solution of the differential equation in terms of hypergeometric functions. A solution is given for a plate whose thickness is proportional to the radius. An approximate solution is given for the deflections of a thin plate. No particular boundary conditions are considered.

*1-FW*

*H. P. Tishchenko and H. I. Veis*

*123*

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 158 (USSR) SOV/124-57-5-6127

AUTHOR: Kovalenko, A. D.

TITLE: Stresses and Displacements in Turbine Wheels Due to Gyroscopic Forces (Napryazheniya i peremeshcheniya v diskakh turbomashin v svyazi s giroskopicheskimi usiliyami)

PERIODICAL: V sb.: Kolebaniya v turbomashinakh, Moscow, AN SSSR, 1956, pp 159-178

ABSTRACT: The disk is investigated in a motion which is the resultant of revolutions around two axes normal to one another. It is assumed that the angular velocities of the derived and relative rotations are constant. Forced vibrations of the wheels appear as a consequence of disturbing Coriolis forces in that type of motion. Where wheels of uniform thickness are concerned, the exact solution of the equation of motion takes the form of cylindrical functions, while in the case of conical wheels the result appears in the form of convergent power series. It is shown that in flexure analysis the forces of inertia arising during wheel vibrations may be disregarded, if the natural-vibration frequency of the wheel differs significantly from the frequency of the

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~~KOVALENKO~~, A.D.; KORNOLKHOV, M.V.; PISARENKO, G.S. [Pysarenko, H.S.];  
~~SAVIN~~, G.M. [Savin, H.M.]; SERENSEN, S.V.

Engineering research developed by the institutes of the Academy  
of Sciences of the Ukrainian S.S.R. in 1956. Prykl.mekh. 3 no.4:  
487-490 '57. (MIRA 11:2)

(Ukraine--Engineering research)

KIL'CHEVSKIY, M.O.; KOVALENKO, A.D.; SIDLYAR, M.M.

Research in the Department of Mechanics, the Department of the  
Theory of Elasticity, and the Department of Aerohydrodynamics  
and Heat Exchange. Nauk. zap. Kyiv. un. 16 no.16:29-41 '57.  
(MIRA 13:3)

(Kiev--Mechanics--Study and testing)

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S/124/60/000/003/015/017  
A005/A001

24.4100

Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 3, pp. 107-108,  
# 3718AUTHOR: Kovalenko, A. D.TITLE: The Application of Hypergeometric Functions to the Theory of PlatesPERIODICAL: Nauk. zap. Kiyevsk. un-t, 1957, Vol. 16, No. 16, pp. 51-68  
(Ukr.; Russ. summary)

TEXT: The problem of symmetric deformation, asymmetric bending, and asymmetric extension of a circular plate are solved; the rigidity of the plate varies corresponding to the one of the following laws:

$$D = D_0 (\pm x)^{\alpha_0} (1-x)^{\beta_0}$$

$$D = D_0 (1-x) \left( x = \pm \left[ \frac{r}{r_0} \right]^{\alpha_0} \right)$$

$$D = D_0 / (1-x).$$

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KOVALENKO, A. D., (Corr. Mbr., Acad. Uk SSR);

"Complex Bending of Circular Plates of Varying Thickness in the Axial-Symmetrical Temperature Field," report presented at the Ninth Scientific-Technical Conference, held at the Khar'kov Higher Aviation-Engineering Military School, Dec 1958.

KOVALENKO, A. D.

AUTHORS: Grigorenko, Ya. M. and Isakhanov, G.V. 24-2-27/28  
TITLE: Scientific Conference on the strength of elements of turbo-machinery at elevated temperatures. (Nauchnoye soveshchaniye po voprosam prochnosti elementov turbomashin pri vysokikh temperaturakh).  
PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, No. 2, pp. 165-167 (USSR).

ABSTRACT: A scientific conference was held in Kiev between September 28 and October 2, 1957 on problems of strength of elements of turbo-machinery at elevated temperatures which was convened by the Institute of Metallo-Ceramics and Special Alloys (Institut Metallokeramiki i Spetssplavov), the Institute of Structural Mechanics (Institut Stroitel'noy Mekhaniki) and the Institute of Thermal Power (Institut Teploenergetiki Akademii Nauk Ukrainskoy SSR) of the Ac.Sc., Ukrainian SSSR. About 200 people participated representing scientific and teaching establishments and works of Moscow, Leningrad, Kiev, Kharkov, Minsk, Kuybyshev, etc. In his opening address, Corresponding Member of the Ac.Sc. Ukraine I. N. Frantsevic pointed out the importance of the problem of high temperature strength of components of turbo-machinery.

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24-2-27/28

Scientific Conference on the strength of elements of turbo-machinery at elevated temperatures.

A number of papers were read relating to the theory of heat conductivity and thermo-elasticity. In his paper "Investigation of the temperature fields in turbine rotors" Ye. P. Dyben reported on the theoretical and experimental investigations of the steady state and the non-steady state thermo-conductivity in turbine rotors of various designs including investigations on concrete specimens of rotors produced by the Kirov and Neva Works, the "Ekonomayzer" Works and others, carried out at the Institute of Thermal Power, Ukrainian Ac.Sc. In studying the temperature fields they used the method of laboratory investigation of non-steady state thermal conductivity by means of high frequency heating, the method of electro-thermal analogy by means of "ЭГА А" equipment etc. They obtained a solution of the problem of non-steady state thermal conductivity of a hollow cylinder of finite length with a relatively general law of the changes of the temperature and the heat transfer coefficients. The Institute, jointly with the Experimental Gas Turbine Construction Works, developed a method of cooling the discs by blowing cooling air through the

Card 2/9

24-2-27/28

Scientific Conference on the strength of elements of turbo-machinery at elevated temperatures.

assembly gaps of the tails of the rotating blades. In his paper "Investigation of the Thermal Stresses in Turbine Rotors" A. D. Kovalenko described results of investigations in the field of thermo-elasticity carried out by the Institute of Structural Mechanics, Ukrainian Ac.Sc., the Kiev State University, the Kiev Polytechnical Institute and the Institute of Thermal Power, Ukrainian Ac.Sc. In these studies the following were investigated: problem of the plane stress state of a disc of variable thickness in the case of a cyclically symmetrical temperature field, problem of complex bending of a disc in the case of an axis-symmetrical temperature field and a variable modulus of elasticity, an axis-symmetrical problem of thermo-elasticity for a thick walled cylinder for various laws of changes of the temperature and of the modulus of elasticity along the radius and along the generatrix, etc. In the investigations strain gauges were used and also electric modelling and computing mechanisms. Furthermore, a method was developed of calculating a rotor of a two-stage aviation gas turbine considering it as a non-uniformly heated and rotating

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Card 4/9 in one paper "Temperature Stresses in Elements of Gas Turbines Under Conditions of Non-steady State Thermal

24-2-27/28

Scientific conference on the strength of elements of turbo-machinery at elevated temperatures.

Regimes" A. G. Kostyuk (MEI) considered the method of approximate solution of the problem of the non-steady state temperature field in which the component is considered as a semi-infinite body during the initial instant of heating.

In his paper "Temperature Stresses in the Runner Blades and Discs" N. N. Malinin (MVTU) described engineering methods of calculating the thermal stresses in discs with variable elasticity parameters.

The papers of Ya. S. Podstrigach (Institute of Mechanical Engineering and Automation, Ukrainian Ac.Sc., L'vov) and of L. G. Fridman (Kuybyshev) dealt with investigations of the temperature stresses in thin walled structures particularly in bodies of aviation engines.

P. S. Kuratov (TsKTI) and Ye. M. Molchanov (VTI) reported on complex investigations of the temperature fields, the stress state and the thermal fatigue of the rotors of definite turbines.

In his paper "Experimental Investigation of the Temperature Stresses in Fully Forged Rotors" G. A. Rayer reported on experimental investigations carried out at the Neva

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24-2-27/28  
Scientific Conference on the strength of elements of turbo-  
machinery at elevated temperatures.

Engineering Works imeni Lenin (Leningrad).  
The representative of the Leningrad Metal Works,  
Engineer I. N. Skibalov conveyed information on the tests  
of equipment for heating individual elements of the  
BT-25-4 turbine during starting.

The second part of the conference was devoted to  
problems of the constructional strength of elements  
on turbo-machinery at elevated temperatures.  
In his paper "Work of the Institute of Metaloceramics  
and Special Alloys, Ukrainian Ac.Sc. in the Field of  
High Temperature Strength" G. S. Pisarenko described  
certain results obtained by the team of the Strength  
Division of the Institute as regards the development of  
new methods and test equipment for studying the mechanical  
characteristics of high temperature materials at  
temperatures up to 1500°C, for high temperature static  
and dynamic tests of metaloceramic materials and of  
components and also certain results of investigations  
relating to dissipation of energy in heat resistant  
materials at normal and at elevated temperatures.

Card 6/9 The paper of G. S. Brokhin, A. B. Platov and A.I. Baranov

24-2-27/28  
Scientific Conference on the strength of elements of turbo-  
machinery at elevated temperatures.

"Technique of High Temperature Tests Applied by VNIITS" and that of Ye. N. German (VIAM) "On Certain New Methods of Testing High Temperature Metallo-ceramic Materials" and the paper of V. Z. Tseytlin, M. A. Filatova, A.V. Ryabchenkov and A. I. Maksimov (TsNIITMASH) "Long Duration and Fatigue Strength in Air and in Gaseous Media of a Nickel-Chromium Alloy Used for Transportation (Gas) Turbines" were all devoted to the study of high temperature materials. The results of natural investigations of elements of turbo-machinery were dealt with in papers presented by the personnel of TsKTI imeni Polzunov. N. N. Kalincvskiy (NII) dealt with the results of investigation of the carrying capacity and the long duration strength of specimens of gas turbine discs of a new design and a complicated configuration under conditions similar to the operating conditions. The author described the features of the heating system and of the damping equipment which ensures the possibility of long duration tests of natural discs by means of racing at a high temperature until disruption occurs and he also considered the deformations of a disc in the case of long

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Scientific Conference on the strength of elements of turbo-<sup>24-2-27/28</sup>  
machinery at elevated temperatures.

duration disruption<sup>tests</sup>, the character of the disruption of the projections provided for fixing the discs and the character is described of the material of the disc before and after fracture. In his paper "Fatigue Testing of Turbine Blades and Materials at Normal and at Elevated Temperatures" I. I. Papchenko (TsKTI) dealt with the method developed by TsKTI for generating blade oscillations permitting creation of loads of various magnitudes and frequencies at the natural oscillation frequencies, giving some of the results of the investigations.

In her paper "On the Evaluation of the Long Duration Strength of Components of Gas Turbines Taking Into Consideration Variable Stresses and Temperatures" Ye. I. Rusanova (NII) considered the conditions of disruption and the possibility of reducing the problem to the usually applied evaluation, assuming a constant temperature and constant stresses.

The paper of M. Yu. Bal'shin (Institute of Metallurgy, Ac.Sc. USSR imeni A. A. Baykov) was devoted to investigating the strength, the mechanism of sintering and the creep in relation to the thermal properties of

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Scientific Conference on the strength of elements of turbo-<sup>24-2-27/28</sup>  
machinery at elevated temperatures.

the materials.

V. V. Kulashov (VVA imeni N. Ye. Zhukovskiy) described the application of the method of finite differences to calculating the strength and profiling of non-uniformly heated discs which operate in the elastic range, under conditions of creep and under conditions of plastic deformation.

G. Ye. Krumel' and A. G. Prokopenko (LPI and YuZhORGRES) reported on the method of starting large thermal power equipment and V. I. Tseytlin reported "On the Selection of Optimum Tooth Dimensions".

For improving further the methods of calculation of the strength of individual elements of turbo-machinery at elevated temperatures, the members of the conference recommended that theoretical and experimental investigations should be extended on heat exchange in the components of turbines as well as on the stress state of these elements under conditions of non-steady state heat exchange.

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(Note: This is a complete translation).

AVAILABLE: Library of Congress.

Investigation on the theory of elasticity for technical advancement  
in the manufacture of power equipment. Visnyk AN URSR 2 no.7:35-41  
Ja '58. (MIRA 11:9)

I. Chlen-korrespondent AN URSR.  
(Turbines) (Elasticity)

KOVALENKO, A.D.; KORNOUKHOV, M.V. [deceased], akademik; PEN'KOV, O.M.;  
PISARENKO, G.S. [Pysarenko, H.S.]; SAVIN, G.M. [Savin, H.M.],  
akademik; SERENSEN, S.V., akademik; FILIPPOV, A.P.

Development of the problem "Scientific fundamentals of force and plasticity" by the Institutes of the Academy of Sciences of the Ukrainian S.S.R. *Pykl. mekh.* 4 no. 3:356-358 '58. (MIRA 13:8)

1. Institut stroitel'noy mekhaniki AN USSR, chlen-korrespondent AN USSR (for Kovalenko).
  2. Laboratoriya gidravlicheskih mashin AN USSR, chlen-korrespondent AN USSR (for Filippov).
  3. AN USSR i Institut stroitel'noy mekhaniki AN USSR (for Kornoukhov).
  4. Institut metallokeramiki i spetsplavov AN USSR, chlen-korrespondent AN USSR (for Pisarenko).
  5. AN USSR i Institut mashinovedeniya AN USSR (for Serensen).
  6. Institut gornogo dela AN USSR, chlen-korrespondent AN USSR (for Pen'kov).
  7. AN USSR i Institut matematiki AN USSR (for Savin).
- (Plasticity)

SOV/24-58-10-11/34

AUTHOR: Kovalenko, A. D. (Kiyev)

TITLE: Some Problems in Thermo-Elasticity in Connection with Thermal Stresses in Turbine Rotors (Nekotoryye zadachi termouprugosti v svyazi s teplovymi napryazheniyami v turbinnykh rotorakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 10, pp 68-76 (USSR)

ABSTRACT: The following problems are considered: a disc under stresses in its own plane, a disc of variable thickness, bending in the presence of a cyclically symmetric temperature field, complex symmetric bending of a disc with a variable (over its thickness) modulus of elasticity, spatial axially symmetric problems of thermo-elasticity with different laws of temperature variation, variation of the modulus of elasticity along the radius, etc. In this work, in addition to analytical methods, use was made of electrical models, tensometry and calculating machines. The paper is subdivided into two sections. The first deals with thermo-elasticity of stressed thin-walled rotor elements and the second with spatial axially symmetric problems of thermo-elasticity. Numerical

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SOV/24-58-10-11/34

Some Problems in Thermo-Elasticity in Connection with Thermal Stresses in Turbine Rotors

data obtained from the solution of the corresponding differential equations are summarised in Figs.2 to 7. There are 7 figures and 8 references; 6 of the references are Soviet and 2 are English.

SUBMITTED: January 00, 1958.

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14(10);18(7)

PHASE I BOOK EXPLOITATION

SOV/3036

Kovalenko, Anatoliy Dmitriyevich

Kruglyye plastiny peremennoy tolshchiny (Circular Plates of Variable Thickness) Moscow, Fizmatgiz, 1959. 294 p. Errata slip inserted. 4,000 copies printed.

Ed.: G. I. Fel'dman; Tech. Ed.: S. S. Gavrilov.

**PURPOSE:** This book is intended for scientists and designers engaged in investigating and calculating thin-walled structures.

**COVERAGE:** The book develops the theory of the bending of circular plates of variable thickness for a wide range of profiles. It treats the effects of applied forces as well as thermal stresses due to non-uniform heating. Following the development of the basic differential equations, the book treats in great detail symmetrical bending of plates, antisymmetrical bending, cyclically symmetrical bending, and compound symmetrical bending. There is an appendix dealing with the properties of hypergeometric functions. No personalities are mentioned. There are 57 references incorporated in the text: 34 Soviet, 10 English, 7 German, 3 French,

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Circular Plates (Cont.)

2 Latin, and 1 Japanese.

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## Circular Plates (Cont.)

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TABLE I BOOK REFERENCES

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Александров, Иван Иосифович. Исследования в области механики металлов. Проблемы прочности материалов и конструкций. Москва, 1975. 599 с. Серия «Научная мысль».

Берг, М. И. Д. И. Работов, профессор, доктор технических наук. Методы расчета прочности металлов. М.: Издательство «Машиностроение», 1975. 200 с. Серия «Научная мысль».

Коваленко, А. Д. Исследования в области прочности металлов. М.: Издательство «Машиностроение», 1975. 200 с. Серия «Научная мысль».

ОБЪЕКТЫ: Эта книга посвящена вопросам прочности металлов в общем и в частности в периодическом. Эта коллекция была подготовлена по распоряжению Академии Наук СССР в 1975 году в честь 50-летия со дня рождения академика Коваленко, одного из ведущих специалистов в области прочности металлов. В книгу вошли статьи, посвященные различным проблемам прочности металлов. В первой части статьи посвящены вопросам прочности металлов в общем, во второй части — вопросам прочности металлов в периодическом. В третьей части — вопросам прочности металлов в статическом. В четвертой части — вопросам прочности металлов в динамическом. В пятой части — вопросам прочности металлов в коррозионном. В шестой части — вопросам прочности металлов в радиационном. В седьмой части — вопросам прочности металлов в других условиях. В восьмой части — вопросам прочности металлов в других условиях. В девятой части — вопросам прочности металлов в других условиях. В десятой части — вопросам прочности металлов в других условиях.

PART II. DYNAMICS AND CALCULATION OF RESONANCE AND RIGIDITY

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Давиденко, В. П., и Гусев, А. А. Вращающиеся тела в статическом поле тяжести. 194

Гусев, А. А. Асимптотические методы изучения колебательных движений вращающегося тела. 205

Коваленко, А. Д. Вращающиеся тела в статическом поле тяжести. 219

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КОВАЛЕНКО, А. Д.

KOVALENKO, A.D.

**AUTHOR:** Alferov, Y. V. 008/50-57-2-48/60

**TITLE:** Continuous Fermentation and Breeding of Microorganisms  
(*Spriyevnoye vroseniye i vyrashchivaniye mikroorganizmov*)

**PERIODICAL:** Vestnik Akademii nauk SSSR, 1959, Nr 2, pp 106-108 (USSR)

**ABSTRACT:** The Institut mikrobiologii Akademii nauk SSSR (Microbiological Institute of the Academy of Sciences, USSR) convened a conference from October 13 to 15, 1958 which dealt with the investigation of some working results in this field as well as with the discussion of a further intensification of the production basing on the activity of microorganisms. The conference was attended by more than 200 representatives of scientific and scientific branch research institutes, enterprises, sov.arkhoses, universities, as well as foreign scientists. The following lectures were heard:  
 N. B. Iyernalinstkiy spoke of the theoretical foundation of the method of continuous microbe breeding and its prospects of application in the microbiological industry.  
 Ye. A. Plevako, Vsesoyuznyy nauchno-issledovatel'skiy institut khlebopekarnoy promyshlennosti (All-Union Scientific Research Institute of Bread-Production Industry) dealt with the problem of the breeding of yeast in solutions containing molasses.  
 Pa. I. Fisher, K. P. Andreyev, V. A. Utenkov, N. Ia. Kaluzhnyy and A. P. Krushchik, Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznyy i sul'fitno-spirovoy promyshlennosti (All-Union Scientific Research Institute for the Industry of Hydrolysis and Sulfite Spirits) evaluated the theoretical and practical work in the field of continuous fermentation of wood hydrolysates and sulfite liquor as well as their utilization for obtaining fodder yeast.  
 Ya. L. Mamasova, Krasnoyarskiy gidroliznyy zavod (Krasnoyarsk Hydrolysis Plant) said that the introduction and completion of the continuous process of yeast breeding made it possible to increase the output of yeast factories by ten times.  
 V. L. Yakovlev, A. L. Malchenko, Vsesoyuznyy nauchno-issledovatel'skiy institut spirtovoy i likerovo-vinogradnoy promyshlennosti (All-Union Scientific Research Institute of the Spirit, Liqueur and Brandy Industry), V. M. Nekhaevich, Dekretinskaya nauchno-issledovatel'skaya laboratoriya (Dekretinskaya Scientific Research Laboratory) reported on the experiment of applying the method of continuous fermentation

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Continuous Fermentation and Breeding of Microorganisms 807/30-59-2-AR/60

of the starchy raw material and syrup in the alcohol and acetone-butanol industry.

**S. A. Konovalov**, All-Union Scientific Research Institute of the Alcohol, Liqueur and Brandy Industry reported on the problems of antiseptics in fighting infection during fermentation.

**L. Yu. Madrinakaya**, Institut mikrobiologii Akademi nauk USSR (Microbiological Institute of the AS USSR) reported on the investigation of the morphological and physiological properties of yeast.

**A. D. Kovalenko**, Andrushevskiy spirtovoy savod (Andrushevka Distillery), **M. Ya. Saizhenko**, Malo-Vistovskiy spirtovoy savod (Malo-Vistovsky Alcohol-Distillery), **N. Makarova**, Smolenskiy Sovmashos (Smolensk Sovmashos) reported on some working results obtained by distilleries in the syrup fermentation by using the method of continuous flow.

**M. S. Gityayanskaya**, Leningradskiy universitet (Leningrad University) characterized the correlation of reproduction processes and biochemical activity of acetic acid bacteria in the high-speed production of vinegar.

**N. M. Ieronova**, Microbiological Institute of the AS USSR spoke of the possibility of obtaining vitamin B<sub>12</sub> by continuous breeding of propionic acid bacteria (propionovokislitsy bakterii). **S. L. Eriberg**, **O. Z. Grabovskaya**, (All-Union Scientific Research Institute of Antibiotics) reported on the application of this method in the production of penicillin.

**V. V. Lyutskina**, All-Union Scientific Research Institute of the Spirit, Liqueur, and Brandy Industry showed that the method of accelerated fermentation of the fungus *Aspergillus niger* University reported on the results of investigations of the natural microflora by the method of capillary microscopy which he had developed.

**V. A. Kozlov**, Kiev University demonstrated his new batcher practice for continuous breeding of microorganisms in laboratory practice.

**V. Vintik** and **V. Ridica** (Czechoslovakia) expressed their opinions on the methods of continuous breeding of microorganisms.

In this conference it was pointed to the necessity of organizing the industrial production of cultures for continuous fermentation.

Cont. 4/4

KOVALENKO, A.D. (Kiyov)

Using methods of the technical theory of elasticity in investigating stressed state of parts of turbomachines. *Fizkhl.mekh.*  
5. no.2:142-154 '59. (MIRA 12:9)

1. Institut stroitel'noy mekhaniki AN USSR.  
(Turbomachines) (Strains and stresses)

NOVA ALGAKO, A.D.

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

- 138. A. A. Eringen (U.S.S.R.): Problems of the theory of plasticity under variable loading.
- 139. A. A. Eringen (U.S.S.R.): Elastic-plastic vibrations of rods of non-circular cross section.
- 140. V. G. Zhurav (U.S.S.R.): The forced nonlinear flexural vibrations of a rectangular plate.
- 141. V. G. Zhurav (U.S.S.R.): The forced nonlinear flexural vibrations of a rectangular plate with a variable load.
- 142. A. A. Eringen (U.S.S.R.): On a method of solving the equations of nonlinear vibrations of a rectangular plate.
- 143. A. A. Eringen (U.S.S.R.): The distribution of vertical stresses in a plate under a point load and a variable load.
- 144. A. A. Eringen (U.S.S.R.): Bending of multilayer plates of anisotropic material.
- 145. A. A. Eringen (U.S.S.R.): On the effect of aging and anisotropy on the strength of composites.
- 146. A. A. Eringen (U.S.S.R.): On the time of rupture in composites under impact loading.
- 147. A. A. Eringen (U.S.S.R.): On some variational principles in the theory of plasticity.
- 148. A. A. Eringen (U.S.S.R.): A procedure of determining an impact load on a plate.
- 149. A. A. Eringen (U.S.S.R.): Some generalizations of the semi-empirical theory of fracture of elastic-plastic materials.
- 150. A. A. Eringen (U.S.S.R.): The time of a visco-plastic medium in a plasticity theory.
- 151. A. A. Eringen (U.S.S.R.): On the elastic equilibrium of thin, flexible orthotropic plates.
- 152. A. A. Eringen (U.S.S.R.): On the influence of the thickness of the middle layer on the stability of thin elastic cylindrical shells under impact loading.
- 153. A. A. Eringen (U.S.S.R.): Elastic stability and post-buckling behavior of a shell.
- 154. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 155. A. A. Eringen (U.S.S.R.): Strength and plasticity of a shell.
- 156. A. A. Eringen (U.S.S.R.): The design of flexible plates and shells on elastic foundations.
- 157. A. A. Eringen (U.S.S.R.): Bending of rectangular shallow shells with elastic ribs.
- 158. A. A. Eringen (U.S.S.R.): On the solution of the nonlinear algebraic equations of shell theory.
- 159. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 160. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 161. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 162. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 163. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 164. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 165. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 166. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 167. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 168. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 169. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.
- 170. A. A. Eringen (U.S.S.R.): The effect of support elasticity on the natural vibrations of rods.

KOVALENKO, A.D.

PHASE I BOOK EXPLOITATION

SOV/4178

Akademiya nauk Ukrayins'koyi RSR. Instytut budivel'noyi mekhaniky

Zadachi termoprzhnosti v energomashynobuduvanni (Problems of Thermoelasticity in Power-Machinery Construction) Kyiv, 1960. 176 p. 1,000 copies printed.

Ed. of Publishing House: T.K. Remennik; Resp. Ed.: H.M. Savin, Academician, Academy of Sciences UkrSSR; Tech. Ed.: O.M. Lysovets'.

PURPOSE: This book is intended for turbine designers.

COVERAGE: This book is a collection of 8 Ukrainian articles based on work under the general supervision of A.D. Kovalenko. Each article has a short summary in Russian. The object of the study is to test turbine elements for stress conditions, especially those due to nonuniform heating. References accompany each article.

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Foreword

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Problems of Thermoelasticity (Cont.)

SOV/4178

- Kovalenko, A.D. Three-Dimensional Bending of a Circular Plate of Variable Thickness in an Axially Symmetrical Temperature Field 5  
The author investigates a thin solid plate with a circular cross section and a profile of thickness which varies symmetrically with respect to the center
- Il'yin, L.O. The State of Stress of a Thin Conical Shell in an Axially Symmetrical Temperature Field 28
- Shevchenko, Yu.M. The State of Stress of a Circular Symmetrically Loaded Elastic Cylinder With a Varying Modulus of Elasticity 57
- Tabieva, G. A. Two-Dimensional Strain of a Cylinder With Axially Symmetrical Nonhomogeneous Characteristics Resulting From Nonuniform Heating 94
- Motovylovets', I.O. Nonstationary Thermal Conductivity in a Cylinder of Finite Length 101

Card 2/3

KOVALENKO, A.D. (Kiyev)

Flat shells of revolution with variable thickness in a  
three-dimensional temperature field. *Prykl.mekh.* 6  
no.3:241-250 '60. (MIRA 13:8)

1. Institut mekhaniki AN USSR.  
(Elastic plates and shells)  
(Thermal stresses)

BR

PHASE I BOOK EXPLOITATION SOV/5899

Kovalenko, Anatoliy Dmitriyevich, Yaroslav Mikhaylovich Grigorenko, and Nonna Aleksandrovna Lobkova

Raschet konicheskikh obolochek lineyno-peremennoy tolshchiny (Design of Conical Shells With Tapered Wall Thickness) Kiyev, Izd-vo AN UkrSSR, 1961. 327 p. 2500 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut mekhaniki.

Resp. Ed.: G. N. Savin, Academician, Academy of Sciences UkrSSR; Ed. of Publishing House: R. L. Imas; Tech. Ed.: N. P. Rakhlina.

PURPOSE: This book is intended for design engineers and scientific workers concerned with investigating the strength of thin-walled machine parts.

COVERAGE: A method is given for the calculation of stresses and displacements in axisymmetrically deformed thin conical shells with tapered wall thickness, used mainly in turbomachinery. The first 70 pages give the derivation and transformation of basic equations and of their solutions. The remainder of the book contains tables (254 pages) of particular solutions of derived  
Card 1/4

Design of Conical Shells (Cont.)

SOV/5899

homogeneous equations. The design method discussed can be used for machine elements and constructions of tapered-thickness conical-shell shaped parts and constructions under various loads (forces and moments applied on the contour, centrifugal forces, aerodynamic surface pressure, etc.) and subject to axisymmetrical nonuniform heating at various boundary conditions. The tables are based on exact solutions by hypergeometric functions and are calculated for a wide range of apex angles of shells: from shallow ones (the main and backward-bladed impeller disks of centrifugal compressors) to shells with a small apex angle (half-shafts of gas turbines). The tables were calculated on the "Strela" (Arrow) electronic digital computer at the Vychislitel'nyy tsentr AN SSSR (Computing Center, Academy of Sciences USSR). The design method is illustrated by examples taken from turbomachinery design practice. No personalities are mentioned. There are 7 references: 4 Soviet and 3 German.

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Foreword

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HELYANKIN, Fedor Pavlovich; YANSENKO, Vladimir Filippovich; DYBENKO, Georgiy Ivanovich; KOVALENKO, A.D., akademik, otv. red.;  
TIPOVA, N.M., red. izd-va; KADASHEVICH, O.A., tekhn. red.

[Engineering characteristics of the DSP plastic] Mekhanicheskie kharakteristiki plastika DSP. Kiev, Izd-vo Akad. nauk USSR, 1961. 124 p. (MIRA 15:2)

1. Akademiya nauk USSR (for Kovalenko).  
(Plastics--Testing)

SAVIL, Guriy Nikolayevich; GEORGIYEVSKAYA, Valentina Vladimirovna; KOVA-  
LENKO, A.D., akademik, otv. red.; IMAS, R.L., red. izd-va; YEPI-  
MOVA, M.I., tekhn. red.

[Development of mechanics in the Ukraine during the Soviet period]  
Razvitie mekhaniki na Ukraine za gody Sovetskoi vlasti. Kiev, Izd-  
vo Akad. nauk USSR, 1961. 279 p. (MIRA 14:11)

1. AN USSR (for Kovalenko).

(Ukraine--Mechanics)

KOVALENKO, A.D., akademik, otv. red.; IMAS, R.L., red.;  
LIBERMAN, T.R., tekhn. red.

[Thermal stresses in turbomachinery parts; reports] Teplo-  
vye napriazhenia v elementakh turbomashin; doklady.  
Kiev, Izd-vo AN USSR. No.1. 1961. 164 p. (MIRA 15:7)

1. Nauchnoye soveshchaniye po teplovym napryazheniyam v ele-  
mentakh turbomashin, Kiev, 1960. 2. Akademiya nauk USSR (for  
Kovalenko).

(Turbomachines) (Thermal stresses)

Kovalenko, A. D.  
BOROVSKIY, P. V.

PHASE I BOOK EXPLOITATION

SOV/6206 25

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek, 24-29 oktyabrya 1960. (Transactions of the Conference on the Theory of Plates and Shells Held in Kazan', 24 to 29 October 1960). Kazan', [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary; N. A. Alomyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev, A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin, A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy, R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin; Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and engineers who are interested in the analysis of strength and stability of shells.

Card 1/14

Transactions of the Conference (Cont.)

SOV/6206

75

**COVERAGE:** The book is a collection of articles delivered at the Conference on Plates and Shells held in Kazan' from 24 to 29 October 1960. The articles deal with the mathematical theory of plates and shells and its application to the solution, in both linear and nonlinear formulations, of problems of bending, static and dynamic stability, and vibration of regular and sandwich plates and shells of various shapes under various loadings in the elastic and plastic regions. Analysis is made of the behavior of plates and shells in fluids, and the effect of creep of the material is considered. A number of papers discuss problems associated with the development of effective mathematical methods for solving problems in the theory of shells. Some of the reports propose algorithms for the solution of problems with the aid of electronic computers. A total of one hundred reports and notes were presented and discussed during the conference. The reports are arranged alphabetically (Russian) by the author's name.

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S/124/63/000/003/034/065  
1234/1308

AUTHOR: Kovalenko, A. D.

TITLE: Solutions in special functions of problems of asymmetric deformation of shallow spherical and conical shells

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1963, 13, abstract 5V31 (Tr. Konferentsii po teorii plastin i obolochek, 1960. Kazan', 1961, 177-185)

TEXT: The author considers deformations of shells of revolution as above, subject to edge and surface forces and to a 3-dimensional temperature field, each expanded into a Fourier series along the parallel. Solutions are found in degenerate hypergeometric functions defined by power series, for whose summation recurrence formulas are used, with subsequent tabulation by means of digital computers. Some special properties of degenerate hypergeometric functions are considered. Particular solutions are indicated which coincide with Bessel's solutions (for a spherical shell) and with elementary

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KOVALENKO, A.D.

PHASE I BOOK EXPLOITATION

SOV/6086

Nauchnoye soveshchaniye po teplovym napryazheniyam v elementakh turbomashin.  
2d, Kiyev, 1961.

Teplovyye napryazheniya v elementakh turbomashin; doklady nauchnogo soveshchaniya, vyp. 2 (Thermal Stresses in Turbomachine Parts; Reports of the Scientific Conference, no. 2). Kiyev, Izd-vo AN UkrSSR, 1962. 174 p. 1800 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut mekhaniki.

Resp. Ed.: A. D. Kovalenko, Academician, Academy of Sciences UkrSSR; Ed.: T. K. Remennik; Tech. Ed.: A. M. Lisovets.

PURPOSE: This collection of articles is intended for scientific workers and turbine designers.

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3

Thermal Stresses (Cont.)

SOV/6086

COVERAGE: The book contains 18 articles dealing with investigations connected with thermal stresses in turbine components. Individual articles discuss thermoelasticity, thermoplasticity, thermal conductivity, and temperature fields. No personalities are mentioned. References accompany 17 articles. The conference recommended broadening the theoretical and experimental investigations of aerothermoelastic and aerothermoplastic problems, the development of investigations of general problems of the theory of thermoelasticity and thermoplasticity based on the thermodynamic principles of reversible and nonreversible processes, the development of effective calculation methods for thermal stresses taking into account plastic deformations and creep in thin- and thick-walled structural members under stationary and nonstationary operating conditions, the development of experimental-research methods for thermometry and tensiometry in connection with modern operational conditions of mechanical structures, and the broadening of investigations of problems in the thermostrength of structures, especially of those operating under conditions of frequent and sharp temperature changes.

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3

Thermal Stresses (Cont.)

SOV/6086

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Introduction (A. D. Kovalenko, Academician, Academy of Sciences UkrSSR) 3

Kovalenko, A. D. [Kiyev]. Generalization of Some Problems of the Theory of Calculating Thermal Stresses in Conic Shells 7

Grigorenko, Ya. M., and L. A. Il'in [Kiyev]. Complex Equations of the Theory of Thin Shells With Temperature Influences Taken Into Account 27

Motovilovets, I. A. [Kiyev]. Thermal Stresses in Disks With Temperature Changing Along the Thickness 34

Grinchenko, V. T. [Kiyev]. Stationary Thermal Stresses in a Solid Finite-Length Cylinder 41

Veytsman, R. I. [Leningrad]. Nonstationary Thermal Stresses in an Elastic Half-Space During a Local Change in Surface Temperature 49

Card 3/6 3

BELYANKIN, Fedor Pavlovich [Beliankin, F.P.]; KOVALENKO, A.D., akademik,  
otv. red.; TRETYAK, O.N., red.; LISOVETS', O.M. [Lysovets', O.M.],  
tekhn. red.

[Effect of gravitation of the moon and sun on crustal tectonic  
processes] Tektonichni protsesy v zemni kori pid gravitatsiinym  
vplyvom Misiatsia ta Sontsia. Kyiv, Vyd-vo Akad. nauk URSR,  
1962. 51 p. (MIRA 15:12)

1. Akademiya nauk Ukr. SSR (for Kovalenko).  
(Earth--Surface) (Gravitation)

KOVALENKO, A.D., akademik, otv. red.; REMENNIK, T.K., red.; LISOVETS,  
A.M., tekhn.red.

[Thermal stresses in the elements of turbomachines] Teploye  
napriazheniia v elementakh turbomashin; doklady. Kiev, Izd-  
vo AN USSR. No.2. 1962. 174 p. (MIRA 15:12)

1. Nauchnoye soveshchaniye po teplovym napryazheniyam v ele-  
mentakh turbomashin, Kiev, 1961. 2. Akademiya nauk Ukr. SSR  
(for Kovalenko).

(Thermal stresses) (Turbomachines)

S/879/62/000/000/003/088  
D234/D308

AUTHOR: Kovalenko, A. D. (Kiev)

TITLE: Development of the theory of design of conical shells  
in connection with problems of machine constructionSOURCE: Teoriya plastin i obolochek; trudy II Vsesoyuznoy konfe-  
rentsi, I'vov, 15-21 sentyabrya 1961 g. Kiev, Izd-vo  
AN USSR, 1962, 33-57

TEXT: A review of investigations carried out at the Institut mekha-  
niki AN USSR (Institute of Mechanics AS UkrSSR) on the stressed  
state of thin conical shells of revolution, of constant and linear-  
ly varying thickness, subject to axially symmetrical, antisymme-  
trical or arbitrary loads and to volume temperature fields. These  
investigations are based on the use of exact solutions tabulated  
with the aid of computers. Hypergeometrical functions of the sec-  
ond kind were introduced and studied in order to improve the cal-  
culation. Resolvent equations and solutions are considered in de-  
tail for the above cases, and examples of design of machine com-  
ponents are given. There are 9 figures and 11 references.

SAVIN, G.N., otv. red.; ADAMUROV, R.A., red.; ALUMYAE, N.A., red.;  
AMBARTSUMYAN, S.A., red.; AMIRO, I.Ya., red.; BOLOTIN, V.V., red.;  
VOL'MIR, A.S., red.; GOL'DENVEYZER, A.L., red.; GRIGOLYUK, E.I.,  
red.; KAN, S.N., red.; KARMISHIN, A.V., red.; KIL'CHEVSKIY, N.A.,  
red.; KISELEV, V.A., red.; KOVALENKO, A.D., red.; MUSHTARI, Kh.M.,  
red.; NOVOZHILOV, V.V., red.; UMANSKIY, A.A., red.; FILIPPOV, A.P.,  
red.; LISOVETS, A.M., tekhn. red.

[Proceedings of the Second All-Union Conference on the Theory of  
Plates and Shells] Trudy Vsesoiuznoi konferentsii po teorii plastin i  
obolochek. 2d, Lvov, 1961. Kiev, Izd-vo Akad. nauk USSR, 1962. 581 p.

(MIRA 15:12)  
1. Vsesoyuznaya konferentsiya po teorii plastin i obolochek. 2,  
Lvov, 1961.

(Elastic plates and shells)

AM4033670

BOOK EXPLOITATION

S/

Kovalenko, Anatoliy Imitriyevich; Grigorenko, Yaroslav Mikhaylovich; Il'in, Leonid Alekseyevich

Thin conical shell theory and its application in machine construction (Teoriya tonkikh konicheskikh obolochek i yeye prilozheniye v mashinostroyenii) Kiev, Izd-vo AN USSR, 63. 0286 p. illus., biblio. 2,600 copies printed. (At head of title: Akademiya nauk Ukrainskoy SSR. Institut mekhaniki)

TOPIC TAGS: cylindrical shell, thin shell, conical shell, stress calculation, thermal stress, stress load, nonlinear shell structure theory, hypergeometric functions

PURPOSE AND COVERAGE: The book is devoted to the theory of thin conical shells of revolution used as structural elements in machine building. Equations are derived for stresses in conical shells of constant and variable thickness with arbitrary angle of aperture under axially-symmetrical, antisymmetrical, and cyclic loading, and also under uneven heating due to a three-dimensional temperature field. These problems are solved in terms of special functions, and methods are presented for designing conical shells and elastic systems which contain such shells, based on

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the use of tables of exact calculations with the aid of electronic digital computers. The stress state and the stiffness of conical shells are analyzed under different geometrical parameters and forms of load; the analysis is accompanied by examples. The book is intended for scientific workers and engineers engaged in research, design, and strength calculations for thin-wall machine elements. The authors thank N. A. Lobkova of Institut mekhaniki AN UkrSSR for help with the preparation of the manuscript.

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Ch. 3. Antisymmetrical deformation of conical shells - - 135

Ch. 4. Cyclic deformation of conical shells - - 219

Ch. 5. Application of the theory of conical shells to the design of machine parts - - 234

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AP4033670

SUB CODE: AS

OTHER: 007

SUBMITTED: 28Nov63

DATE ACQ: 16Apr64

NR REF SOV: 040

Card 3/3

KIL'CHEVSKIY, Nikolay Aleksandrovich; KOVALENKO, A.D., akademik,  
otv. red.; LUFAN, Yu.A., red.; KODASHEVICH, O.A., tekhn.  
red.

[Fundamentals of the analytic mechanics of shells] Osnovy  
analiticheskoi mekhaniki obolochek. Kiev, Izd-vo AN USSR,  
1963. 353 p. (MIRA 16:9)

1. AN Ukr.SSR (for Kovalenko).  
(Mechanics, Analytic)  
(Elastic plates and shells)

KOVALENKO, A.D. (Kiyev)

Investigations in the field of technical aspects of the theory  
of elasticity. Prikl. mekh. 9 no.4:349-355 '63.  
(MIRA 16:8)

KOVALENKO, A.D. (Kiev)

"Exact analytical solutions for shells of revolution".

report presented at the 2nd All-Union Congress on Theoretical  
and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

BELYANKIN, Fedor Pavlovich; YATSENKO, Vladimir Filippovich;  
DYBENKO, Georgiy Ivanovich; KOVALENKO, A.D., akademik,  
otv. red.; GILELAKI, V.I., red.

[Strength and deformability of laminated plastics] Prochnost' i deformativnost' sloistykh plastikov. Kiev, Naukova dumka, 1964. 217 p. (MIRA 17:12)

1. Akademiya nauk Ukr.SSR (for Kovalenko).

KOVALENKO, A.D., akad. nauk, ctv. red.; GHEMLAKH, V.I., red.

[Thermal stresses in structural elements; reports] Teplovye napriazheniya v elementakh konstruktсии; doklady. Kiev, Naukova dumka, 1964. 369 p. (MIRA 17:10)

1. Nauchnoye soveshchaniye po teplovym napriyazheniyam v elementakh konstruktсии. 4th. 2. Akademiya nauk Ukr.SSSR (for Kovalenko).

L 39277-2 EAT(d)/EXT(m)/INT(w)/SIA(d)/EAP(r)/IMP(k)/SMA(h) PP-4/Feb 84/CS

ACCESSION NR AT6000817 S/0000/64/000/004/0034/0046

AUTHOR: Kovalenko, A. D. (Acad. Sci. USSR) (Kiev)

23  
21

TITLE: Precise solution of the problem of thermal stresses in spherical shells

SOURCE: Nauchnoye soveshchaniye o teplovykh napryazheniyakh v elementakh konstruktivnykh i teplovykh napryazheniyakh v elementakh konstruktivnykh (Thermal stresses in construction elements); doklady soveshchaniya, no. 4, Kiev, Naukova dumka, 1964, 34-5

TOPIC TAGS: thermal stress, shell stress, shell of rotation, shell stress, spherical shell

ABSTRACT: The paper considers the precise solution of the problem of thermal stress in thin spherical shells under axisymmetric uniaxial heating with the temperature along the meridian and shell depth varying arbitrarily. This problem is solved by the moment theory of axisymmetrically deformed shells of rotation. Using the theory developed for plotting equations for conical shells (A. D. Kovalenko, Ya. M. Grigorenko and L. A. Il'in) the main unknowns are the vertical force and the variation in curvature along the parallel. By introducing the integral characteristics of pure thermal deformations, the thermal stress problem is transformed into a one-dimensional problem. The distribution

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ACCESSION NUMBER AT5001817

of pure thermal deformations along the meridians transformed into a Fourier series. As a result of these investigations, a method for calculating thermal stress has been worked out for a spherical shell based on precise solutions tabulated by electronic computers. The author derives the principal equation for axisymmetrically deformed shells of rotation, as well as the resolution equation and cites several examples for a hypergeometric function and for a non-uniform equation. The equations are then solved for forces and moments. Orig. art. has 57 formulas.

SUBMITTED: 02 Jun 64

ENCL: 00

SUB CODE: AS, ME

NO REF IDV: 005

OTHER: 008

Card 2/2

ACCESSION NR: AP4030386

SI/0021/64/000/004/0442/0446

AUTHOR: Kovalenko, A. D. (Academician of AN UkrSSR)

TITLE: Generalization of Lamel's solutions

SOURCE: AN UkrSSR. Doprvidi, no. 4, 1964, 442-446

TOPIC TAGS: Lamel solution, Lamel formation, circular plate, body of rotation, differential equation, inhomogeneous equation, power function, shell theory, heterogeneous equation

ABSTRACT: The author generalizes Lamel's results on the special solution of the heterogeneous differential equation (4)

$$\left[ z_1 \frac{d}{dz_1} \left( z_1 \frac{d}{dz_1} + \beta_1 - 1 \right) - z_1 \right] W + Az_1^q = 0,$$

in which the free term is a power function. Special solutions are found for a heterogeneous differential equation of the  $(q + 1)$ st order (6), which with  $q = 1$  passes into equation (4). These solutions are obtained in generalized hypergeometric functions; on constructing a special solution of equation (6),

Card. 1/2

ACCESSION NR: AP4037937

S/0198/64/010/003/0237/0246

AUTHOR: Kovalenko, A. D. (Kiev)

TITLE: Exact analytical solutions for shells of revolution

SOURCE: Prykladna mekhanika, v. 10, no. 3, 1964, 237-246

TOPIC TAGS: shell of revolution, conical shell, uniform thickness shell, variable thickness shell

ABSTRACT: Fundamental results are presented of investigations carried out at the Institute of Mechanics, UkrSSR, to obtain exact analytical solutions of differential equations describing the static equilibrium and vibration of shells of revolution. The solutions obtained are used for development of theories and methods of stress-distribution analysis in shells of revolution under external loads and nonuniform heating, which are based on tabulated results of calculation on electronic digital computers.

Card 1/2

1-15804-5 EWT(m), EWP(w), EPP(-)/EWA(c)/T/EWP(-)/EWP(b) Pr-4 SSD/LF91/  
ASD(m)-3 MJW/JD/D.  
ACCESSION NR: APA04870 3/0032/64/030/011/1381/1385

AUTHORS: Kovalenko, A. D.; Amosov, L. T.

TITLE: Nonhomogeneous volume compression with high temperatures and external friction

SOURCE: Izvestiya Akademii Nauk SSSR, Ser. Fiz.-Mat. Nauki, 1964, no. 11, 1381-1385

TOPIC TAGS: compressive property, triaxial test, heat deformation, metal mechanical property, Kh18N9T steel, Kh1 steel, Kh26 steel

ABSTRACT: The authors surveyed the work of several researchers in the testing of metals by triaxial compression. Three methods were cited as being prevalent: 1) testing in a chamber with controlled hydrostatic pressure; 2) compressing a cube of material by three independent partially independent devices; and 3) compressing the material in a collar or yoke. Tests were conducted on compressing specimens of Kh18N9T steel 6 mm in diameter by 10 mm in height, using a collar device in the manner permitting oven heating during compression. The test objectives were to compare the results of using collars made of various materials under varying temperature and compression speed conditions and to evaluate the influence of lubrication of specimen faces. Kh17 and Kh26 steels were used in making collars. Photographs  
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ACCESSION NR. AP4049370

of deformed specimens are shown. The authors concluded that wall lubrication appreciably increases the degree of deformation, and they present plots for demonstrating this phenomenon. The degree of deformation is less pronounced with increasing deformation speed for lubricated specimens. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 00

SUB CODE: NM

NO. REP SOV: 016

ENCL 00

(OTHER) 005

Card 2/2

KLOKVA, N.P.; KOVALENKO, A.D., akademik, rensent;

[Strain gauges for measurements at high temperatures]  
Tenzodatchiki (dlia izmerenii pri povyshennykh tempera-  
turakh. Moskva, Mashinostroenie, 1965. 118 p.  
(MIRA 18:4)

1. Akademiya nauk Ukr.SSR (for Kovalenko).

.KOVALENKO, Anatoliy Dmitriyevich; GILELAKH, V.I., red.; DIKIY, V.N.,  
red.

[Introduction to thermoelasticity] Vvedenie v termo-  
uprugost'. Kiev, Naukova dumka, 1965. 201 p.  
(MIRA 18:9)

KOVALENKO, A.D., akademik, otv. red.; GILELAKH, V.I., red., red.;  
DIKIY, V.N., mlad. red.

[Thermal stresses in structural components; reports of the  
Scientific Conference] Teplovye napryazhenia v elementakh  
konstruktsii; doklady nauchnogo soveshchaniia. Kiev,  
Naukova dumka, 1955. 316 p. (MIRA 18:8)

1. Nauchnoye soveshchaniye po teplovyim napryazheniyam v  
elementakh. 5th.

RAYEV, Z.A.; DROTYANKO, A.S.; KORDYUKOVA, N.S.; SEMENETS, P.A.; KOVALENKO,  
A.D.; PARKHOMENKO, M.R.

Treatment of yeast milk with malt wort for the improvement of  
the quality of compressed yeast. *Ferm. i spirt. prom.* 31  
no.7:18-22 '65. (MIRA 18:11)

1. Ukrainsky nauchno-issledovatel'skiy institut spirtovoy i  
likero-vodochnoy promyshlennosti (for Rayev, Drotyanko,  
Kordyukova). 2. Andrushevskiy spirtokombinat (for Semenets,  
Kovalenko, Parkhomenko).

L 39503-60 EPT(17)EAT(5)W(W)/MP(V)/EWP(K)/EPA(H)/ECP(1)-6 LIP(5)

ACC NR: AM5001740

Monograph

UR/

20  
18  
B+1

Kovalenko, Anatoliy Dmitriyevich

Introduction to thermoelasticity (Vvedeniye v termouprugost') Kiev, Naukova dumka, 65. (201 p. illus., biblio. 2,500 copies printed.

TOPIC TAGS: thermodynamics, thermoelasticity, dynamic stress, shell deformation, thermal conduction, heat stress, material deformation

PURPOSE AND COVERAGE: This book gives a short introduction to the theory of thermoelasticity. It contains basic conditions and methods of thermoelasticity necessary for the study of heat stresses in elementary constructions with stationary and non-stationary temperature fields. Solutions of a series of problems are given on heat stress in discs, plates, spheres and revolving shells in static and quasi-static states. Also dynamic problems of thermoelasticity are viewed as well as thermoelastic effects caused by processes of deformation. This book is recommended for scientists experimenting in the field of thermoelasticity and it can be useful to students specializing in mechanics of deformed media in mechanical-mathematical departments of universities.

TABLE OF CONTENTS (abridged):

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- Introduction --5

Card 1/2

ACC NR:

AP6032413

SOURCE CODE: UR/0021/66/000/009/1135/1140

AUTHOR: Kovalenko, A. D. (Academician AN UkrSSR); Karnaukhov, V. H. --  
Karnaukhov, V. G.

ORG: Institute of Mechanics, AN URSR (Institut mekhaniki AN URSR)

TITLE: Effect of cyclic loading on the temperature of a cylinder made of visco-elastic material

SOURCE: AN UkrRSR. Dopovidi, no. 9, 1966, 1135-1140

TOPIC TAGS: temperature distribution, cyclic load, viscoelastic cylinder

ABSTRACT: The authors investigated the steady-state and unsteady temperature distributions appearing in a long hollow visco-elastic cylinder during cyclic load with torque and normal force applied to its ends. Inertial force is not taken into account. The variational method is applied for the solution of the above-mentioned problems. It is found that with a certain critical value of the load parameter, depending on the thermal and mechanical properties of the material as well as on the cylinder geometry, a continuous temperature increase takes place. Orig. art. has: 4 figures and 24 formulas. [Authors' abstract]

Card 1/1 SUB CODE: 11, 13/SUBM DATE: 28Mar66/ORIG REF: 003/

ACC NR: AM7003446

Monograph

UR/

Kovalenko, Anatoliy Dmitriyevich; Grigorenko, Yaroslav Mikhaylovich; Il'in, Leonid Alekseyevich; Polishchuk, Tat'yana Ivanovna

Calculation of conical shells subjected to antisymmetric stresses (Raschet konicheskikh obolochek pri antisimmetrichnykh nagruzakh) Kiev, Naukova dumka, 66. 0494 p. tables. (At head of title: Akademiya nauk Ukrainskoy SSR. Institut mekhaniki) Errata slip inserted. 2,600 copies printed.

TOPIC TAGS: calculation, conic shell structure, conic shell, circular plate, nonlinear shell structure, turbine, elastic element, loading, antisymmetric loading

PURPOSE AND COVERAGE: The book presents a method of calculating anti-symmetrically stressed conical shells and other elastic systems consisting of rings, circular plates, and cylindrical and conical shells, used as structural parts in construction of turbines and other machinery. Formulas and tables for calculating the above elastic elements are given. The tables are based on analytical solutions obtained using a BESM-2M digital computer. The book is intended for engineers, technicians, and specialized scientific workers in research, construction, and strength calculations of thin-walled machine elements.

Card 1/3

ACC NR: AM7003446

The authors express their gratitude to N. A. Lobkova, scientific coworker of the Institute of Mechanics, AN SSSR, for helping in preparing the manuscript for publication, and to engineer G. P. Golub for assisting in the compilation of tables.

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- Ch. 1. General comments -- 5
- Ch. 2. Antisymmetrical loading -- 8
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- Ch. 4. Calculation method -- 17
- Ch. 5. Formulas for calculation of rings -- 29
- Ch. 6. Analysis of elastic systems consisting of rings, plates, and shells of revolution -- 33
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- Ch. 8. Conic shell of constant thickness -- 46
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ACC NR: AM7003446

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- Ch. 13. Examples of calculations -- 64

Tables of particular solutions for calculating shells of constant thickness -- 75

Tables of particular solutions for calculating plates of linear variable thickness -- 117

Tables of particular solutions for calculating shells of linear variable thickness -- 129

SUB CODE: 21/ SUBM DATE: 19Aug66

Card 3/3

*KOVALENKO, A.F.*

AUTHOR: Kovalenko, A.F., Engineer (Leningrad) 28-1-28/42  
TITLE: Inaccuracies in "ГОСТ 5302-50" (Netochnosti v "ГОСТ 5302-50")  
PERIODICAL: Standartizatsiya, # 1, Jan-Feb 1957, p 75 (USSR)  
ABSTRACT: The author's criticism concerns inconsistencies of terminology in the standard for rules of storage and registration of drawings and other technical documents - "ГОСТ 5302-50".  
AVAILABLE: Library of Congress  
Card 1/1

KOVALENKO, A. F.

AUTHOR: None (given) 28-4-29/35

TITLE: Replies to Published Articles and Letters (Otvety na opublikovaniyye stat'ii i pis'ma)

PERIODICAL: Standartizatsiya, 1957, # 4, p 80 (USSR)

ABSTRACT: Information on the reaction to 4 articles published in "Standartizatsiya" 1957, # 1, is given.

- 1) To the article "On Standards for Methods of Measuring Density", by S.B.Kivilis. The Committee of Standards, Measures and Measuring Devices has said that amendments will soon be made in GOCT 3900-47.
- 2) To the article "Inaccuracies in GOCT 5302-50", by A.F.Kovalenko, Chief Engineer of the All-Union Technological Project Institute (Vsesoyuznyy proektno-tekhnologicheskii Institut) Yaremin informs that the inaccuracies will be eliminated in the projected new standard.
- 3) To the article "On Repair Drawings", by N.V.Tsikurin and N. I. Gorokhov. The Leningrad branch of the All-Union

Card 1/2

1. KOVALENKO, A. F.
2. USSR (600)
4. H orses
7. Raising foals by controlled rearing. Sbor.stud. rab. Umansk.sel'khoz. inst. no. 1. 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KOVALENKO, A.F., inzh.; TRINCHER, Yu.K., inzh.; GRIGOR'YEV, V.Ya., inzh.;  
POPOV, A.G., arkhitektor

Unify the parameters of buildings and installations of sintering  
and dressing factories. From. stroi. 41 no.10:2-5 0 '63.  
(MIRA 16:11)

KOVALENKO, A. F.

35253. Zhilye Doma Iz Sboraykh Zhelezobetonnykh Krupnykh Blokov. Trudy  
IV Vsesoyuz. Konf-tsi Po Beton i Zhelezobeton. Konstruktsiyam. Ch. I.  
M.-L., 1949, S. 85-94

SO: Letopis' Zhurnal'nykh Statey Vol. 34, 1949 Moskva

1. KOROLEV, N. I.; SVETIOV, S. I.; GOLOVKIN, A. M.; KOVALENKO, A. F.
2. USSR 600
4. Rolling Mills
7. Building foundations for rolling mills, Stroi. prom, 31, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KOVALENKO, A. F., Eng.

Chemical Industries

Industrialization of building construction of coke-chemical plants. Stroi. prom.  
31, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, \_\_\_\_\_ June \_\_\_\_\_ 1953, Uncl.

**KOVALENKO, A.F., inzhener; ZHODZISHSKIY, I.L., inzhener.**

**Precast concrete foundations and basement walls for apartment and public buildings, Str. prom. 33 no.9:23-27 S '55. (MIRA 9:1)  
(Foundations) (Precast concrete construction)**

SHUMAYEV, V.K., inzhener; KOVALENKO, A.F., inzhener.

Precast reinforced concrete elements for bunker scaffolds of  
blast furnaces. Stroi.prom. 34 no.2:4-9 F '56. (MLRA 9:5)

1. GPI Ural'skiy Promstroyproyekt.  
(Blast furnaces) (Precast concrete construction)

KOVALENKO, A.F.

KOVALENKO, A.F., inzhener (Leningrad)

Shortcomings in the All-Union State Standard 5302-50.  
Standartizatsiia no.1:75 Ja-F '57. (MLRA 10:5)  
(Mechanical drawing--Standards)

TARASOVA, Ye.M.; KOVALENKO, A.F.

Using soil cement mixes in rural construction. Trudy Inst. antiseism.  
stroi. AN Turk. SSR 3:170-205 '58. (MIRA 13:10)  
(Soil cement) (Turkmenistan--Building)

KOVALENKO, A.J.; SNITKO, I.K., prof., doktor tekhn.nauk, nauchnyy red.;  
GORYACHEVA, T.V., red.izd-va; SHERSTNEVA, N.V., tekhn.red.

[Designing frames by the moment-distribution method] Raschet ran  
metodom raspredeleniya momentov. Moskva, Gos.izd-vo lit-ry po  
stroit., arkh.t. i stroit.materialam, 1960. 89 p.

(MIRA 14:4)

(Structural frames)

KOVALENKO, A. J.

Arranging the enterprises of building materials production bases  
in blocks. Prom. stroi. 38 no.11:8-11 '60. (MIRA 13:10)

1. Ural'skiy Promstroyproyekt, Chlen-korrespondent Akademii  
stroitel'stva i arkhitektury SSSR.

(Building materials industry)

(Factories--Design and construction)

KOVALENKO, Aleksandr Fedorovich; KOVALENKO, A.V., inzh., red.;  
DUGINA, N.A., tekhn. red.

[Reinforced concrete instead of metal] Zhelezobeton vzamen  
metalla. Pod red. A.V.Kovalenko, Moskva, Mashgiz, 1961.  
(MIRA 15:3)  
(Reinforced concrete construction)

KOVALENKO, Antonina Fedorovna; GORCHIYSYNA, Lidiya Leonidovna;  
ISKHAKOVA, Galina Alekseyevna; TSSHOKHER, V.O., prof., red.;  
MIROYEDOVA, A.M., red. izd-va;

[Effective ceramics made of easily fusible clays]Effektivnaia  
keramika iz legkoplavkikh glin. Ashkhabad, Izd-vo Akad. nauk  
Turkmenskoi SSI, 1962. 47 p. (MIRA 16:1)  
(Ceramics) (Building materials)

KOVALENKO, Antonina Fedorovna; TSSHOKHER, V.O., prof., otv. red.;  
MIROYEDOVA, A.N., red. izd-va

[Salt efflorescence on brick and ways to control it] O  
solevykh vytsvetakh na kirpiche i mery bor'by s nimi.  
Ashkhabad, Izd-vo Akad. nauk Turkmenskoi SSR, 1962. 68 p.  
(MIRA 16:4)

(Salts, Soluble) (Bricks)